ANNUAL REPORT TO THE GOVERNOR AND THE CHAIR OF THE HOUSE AND SENATE COMMITTEES ON COMMERCE AND LABOR

VOLUNTARY SOLAR RESOURCE DEVELOPMENT FUND

Submitted by the Department of Mines, Minerals and Energy

June 23, 2014

The Voluntary Solar Resource Development Fund was created by the General Assembly in 2011. Voluntary contributions to capitalize the revolving loan fund over the past three years have been very limited and no loans from the fund have been made.

The law, which expires on July 1, 2016, creates a revolving loan fund administered by the Department of Mines, Minerals and Energy (DMME). The Fund is to be fueled primarily by donations from customers of investor-owned electric utilities. DMME is also authorized to accept donations from other citizens and groups.

DMME was prohibited from issuing any loans from the fund until July 1, 2012. The first year of the program was used to build donations. The law stipulates that DMME may *"…delay making loans beyond July 1, 2012, if, in the opinion of the Director, the monies available in the Fund are not sufficient to defray the administrative costs that would be incurred in managing the loan fund*."

In 2011, a DMME vendor launched an online system that allows for donations to be made to the Fund. The **Virginia Voluntary Solar Resource Development Fund** website is available at https://payments.vi.virginia.gov/solarfund.

In addition to DMME soliciting Fund contributions on the DMME website, the donation link is available on the websites for Dominion Virginia Power and Appalachian Power. Several news stories about the program appeared in local newspapers after the law was passed, and the Database of State Incentives for Renewables & Efficiency (DSIRE), a nationally recognized source of renewable energy information, also includes details on the Fund with a link to the donation page.

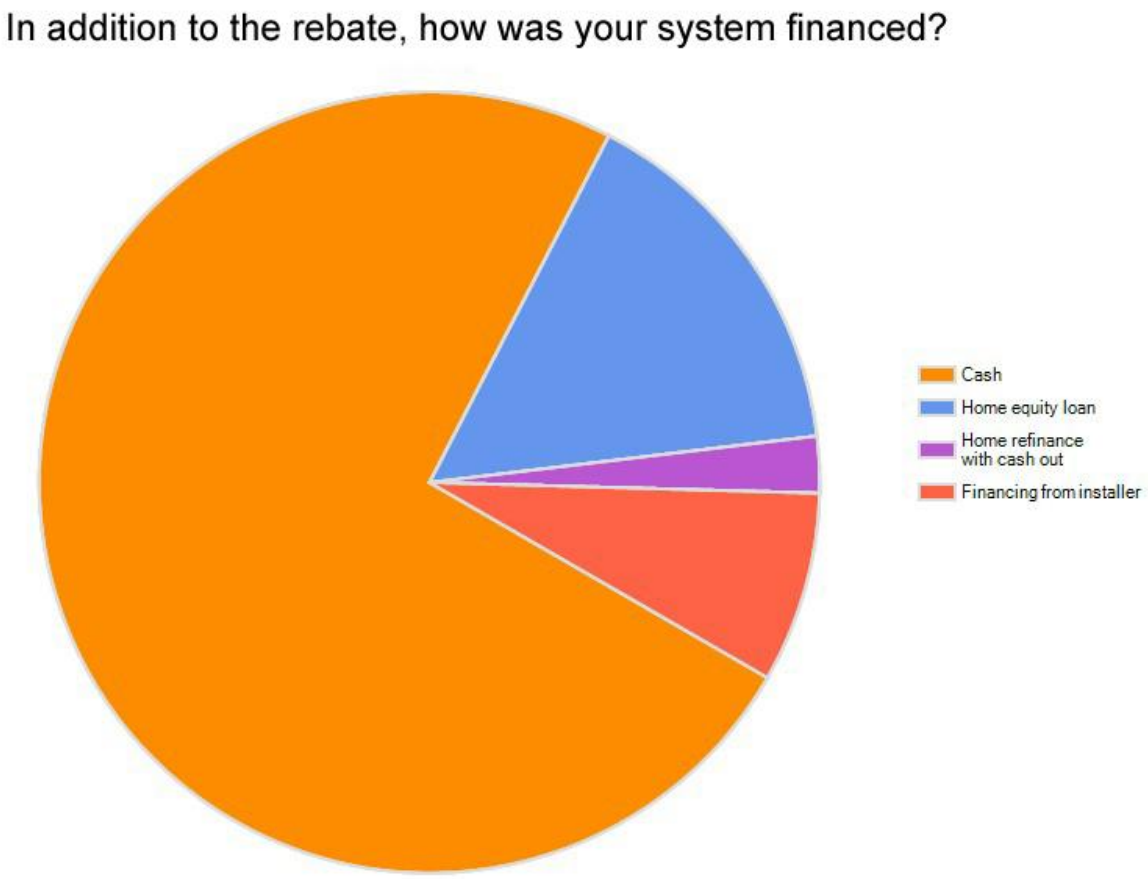
Even though information about the program is widely available, contributions to the fund have been minimal. Through May 31, 2014 contributions to the Fund have resulted in a Fund balance of $341.97, approximately $20 of which was donated this fiscal year. Monthly transaction fees to accept online donations have exceeded $319.00. Contributions have varied from a low of $1 to a high of $50, and generally have been small donations in the range of $5 to $10.

Because of limited contributions and few loan inquiries, DMME convened a January, 2012 meeting of key stakeholders and representatives of several well established solar sales and installation companies to explore ways to market the program more effectively. The meeting participants also discussed what the minimum threshold balance in the Fund should be to begin accepting loan applications and making loans. Based on the current cost to install solar energy equipment, and an analysis of the average system sizes and installed costs for solar energy systems installed under the solar and wind power rebate program managed by DMME (discussed in more detail below), the group felt that an amount ranging from about $500,000 up to $2 million would be needed to begin accepting applications for initial loans.

In a recent customer satisfaction survey of participants in DMME's ARRA-funded Renewable Energy Rebate Program, rebate recipients were asked if, in the absence of a rebate, the availability of a low-interest (1.9%) loan would have provided incentive for them to purchase and install a solar energy system. The results were nearly evenly mixed with roughly 30%

indicating the loan would have been an incentive that would have allowed them to install their system, 30% indicated it would not, and 40% indicated it might.

Rebate recipients were further asked about how they financed the non-rebate portion of their solar installations. The vast majority of respondents indicated they paid cash for their systems.



Several of respondents included clarifying comments to this question. For example:

- Borrowed from relative.
- Some of it was included in the construction loan, the rest was out-of-pocket.
- Loan on Retirement Plan.
- Took it out of savings.
- 0% interest loan for 1 year.
- Margin loan on investments.
- I spent my inheritance.
- Sold Stock.

While the survey did not discriminate between residential and commercial scale solar projects, 740 of the 880 solar rebates issued by DMME were for residential properties. Therefore, it can be assumed that the majority of survey respondents were residential rebate recipients. A very low interest loan might appeal only to those who used higher interest financing from their solar installer or those who used home equity lines of credit. It is unlikely those who could use cash would choose a loan instead, even if at a below-market interest rate.

Low cost loans might be more palatable for larger commercial installations, which are more capital intensive, and where commercial property owners have difficulty in securing funds through conventional lending institutions. For example, several business owners who reserved rebate funds for solar on their commercial properties said they were forced to relinquish their rebate reservation because of the difficulty in attaining a business loan for the installation. Cases like this could be ideal candidates for loans, but also may require a higher Fund balance because, as demonstrated by the DMME rebate program, the average sizes of the systems are larger. Under Virginia's *net metering* law, solar electric systems can be as large as 500 kilowatts (with a utility option to allow larger).

The average size PV systems installed on commercial property under the Rebate Program was around 17 kilowatts with an average installed cost **of $108,000**, or just over $6/watt.

The average size for a solar PV systems installed on a residential property was just under 5 kilowatts with an average installed cost of **$37,000**, or around $7.60 per watt.

The average size for solar thermal systems to heat water on residential properties was approximately 6 kilowatts-equivalent, with an average installed cost of around $11,000. A typical 2-panel residential system had an average installed cost of $8,500.

For solar thermal systems installed on commercial and institutional properties, the simple average system size was approximately 35 kilowatts-equivalent, with an average installed cost of around $77,000. Fifteen systems were in excess of 80 kilowatts-equivalent with installed costs of between $105,000 and $304,000.

While the installed cost for solar in general, and PV in particular, has come down over the past several years, the above examples demonstrate the level of funding necessary to make loans to finance "average" residential or commercial installations. Funding from voluntary contributions to the Fund currently is much less than the amount needed for a loan for even a single "average" residential solar system.

The law establishing the Fund provides that DMME "*shall provide annual reports to the Governor and Chairmen of the House and Senate Committees on Commerce and Labor, on or before June 1 of each year, beginning in 2013, describing the status of the revolving loan program, the number of loans provided, the amount of each loan, the recipient of the loan, the loan's repayment status, and the nature of the project for which the loan was provided.*

It provides that "*The Department may delay making loans beyond July 1, 2012, if, in the opinion of the Director, the monies available in the Fund are not sufficient to defray the administrative costs that would be incurred in managing the loan fund."*

Because of the lack of capital with which to develop a loan program or to make loans, DMME has issued no loans from the Fund for solar projects.